EXHIBIT 3

UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

PARUS HOLDINGS INC.,	)))
Plaintiff,	))
v.	) Civil Action No. 6:19-cv-00432-ADA)
APPLE INC.,	) **JURY TRIAL DEMANDED**
Defendant.	)))))

PARUS HOLDING INC.'S
FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Parus Holdings Inc. ("Parus" or "Plaintiff") for its First Amended Complaint for

Patent infringement ("Amended Complaint") against Apple Inc. ("Apple" or "Defendant"),

hereby alleges as follows:

THE PARTIES

1.   Plaintiff Parus Holdings Inc. is Delaware corporation having its principal place of

business at 3000 Lakeside Drive, Suite 110S, Bannockburn, IL 60015.

2.   Parus is the owner by assignment of U.S. Patent No. 7,076,431 ("the '431

Patent") (attached as Exhibit 1) and U.S. Patent No. 9,451,084 ("the '084 Patent") (attached as

Exhibit 2).

3.   Defendant Apple Inc. is a California corporation with a principal place of

business at One Apple Park Way, Cupertino, California 95014.

4.   Apple is registered to do business in Texas.

5.   Apple has regular and established places of business in this District, including, at 3121 Palm Way, Austin, Texas, 2901 S. Capital of Texas Hwy., Austin, TX, and 12535 Riata Vista Circle, Austin, Texas, and 5501 West Parmer Lane, Austin, Texas. Apple employs thousands of people, including hundreds of engineers, who work at these locations in Texas. The work done at these Apple locations in Texas includes work related to Apple's iPhones, iPads, iPods and Mac products.

6.   Apple also operates brick-and-mortar Apple Stores at Barton Creek Square, Austin, Texas and at Apple Domain Northside, Austin, Texas. Apple uses, offers for sale and sells Apple's iPhones, iPads, iPods and Mac products that include Siri functionality at these Apple Stores.

7.   On information and belief, Apple can be served through its registered agent, CT Corporation System, 818 W. Seventh Street, Suite 930, Los Angeles, California, 90017.

8.   Apple has placed or contributed to placing infringing products like the iPhone X into the stream of commerce via an established distribution channel knowing or understanding that such products would be sold and used in the United States, including in the Western District of Texas. On information and belief, Apple also has derived substantial revenues from infringing acts in the Western District of Texas, including from the sale and use of infringing products like the iPhone X.

9.   Defendant had constructive notice of the '431 Patent based on Parus's marking at least as of June 18, 2007.

10.   Defendant had constructive notice of the '084 Patent based on Parus's marking at least as of February 21, 2018.

JURISDICTION AND VENUE

11.   This is an action for patent infringement arising under the patent laws of the

United States, Title 35 of the United States Code. Accordingly, this Court has subject matter

jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

12.   This Court has specific personal jurisdiction over Defendant at least in part

because Defendant conducts business in this Judicial District. Parus's causes of action arise, at

least in part, from Defendant's contacts with and activities in the State of Texas and this Judicial

District. Upon information and belief, each Defendant has committed acts of infringement

within the State of Texas and this Judicial District by, *inter alia*, directly and/or indirectly using,

selling, offering to sell, or importing products that infringe one or more claims of the '431 Patent

and/or the '084 Patent.

13.   Defendant has committed acts within this District giving rise to this action, and

have established sufficient minimum contacts with the State of Texas such that the exercise of

jurisdiction would not offend traditional notions of fair play and substantial justice.

14.   Venue is proper in this Judicial District pursuant to 28 U.S.C. § 1391(b), (c), and

1400(d) because (1) Defendant has done and continues to do business in this Judicial District,

and (2) Defendant has committed and continues to commit acts of patent infringement in this

Judicial District by, *inter alia*, directly and/or indirectly using, selling, offering to sell, or

importing products that infringe one or more claims of the '431 Patent and/or the '084 Patent.

COUNT I

APPLE'S INFRINGEMENT OF U.S. PATENT NO. 7,076,431

15.   Parus restates and incorporates by reference all of the allegations made in the

preceding paragraphs as though fully set forth herein.

16.   Parus is the owner, by assignment, of U.S. Patent No. 7,076,431. A true copy of

U.S. Patent No. 7,076,431 granted by the U.S. Patent & Trademark Office is attached as Exhibit

1.

17.   Defendant Apple has directly infringed, and is continuing to directly infringe,

literally or under the doctrine of equivalents, at least independent claim 1 of Parus's '431 Patent

by making, using, selling, and/or offering for sale its Apple smartphone devices with Siri in the

United States, in violation of 35 U.S.C. § 271(a).

18.   At least as of the filing of the original complaint, Defendant Apple has knowledge

of the '431 Patent.

19.   Further, on information and belief, Apple had and/or has a policy or practice of

not reviewing the patents of others (including instructing its employees to not review the patents

of others), and has thus remained willfully ignorant of Parus's patent rights. *See, e.g.,* Apple

Ordered to Pay $370 Million Because Its Engineers Ignored Patents When They Built Face

Time, Yahoo Finance, Nov. 7, 2012 (quoting VirnetX attorney during closing arguments as

saying "Apple says they don't infringe. But Apple developers testified that they didn't pay any

attention to anyone's patents when developing their system.").

20.   Defendant Apple's acts of direct infringement of the '431 Patent are willful, and

have caused and will continue to cause substantial damage and irreparable harm to Parus, and

Parus has no adequate remedy at law.

21.   Various products with Siri made or sold by Apple directly infringe at least

independent claim 1 of the '431 Patent. Those Apple products include at least the Apple iPhone

X or later models, the Apple iPhone 6s or later models, iPad Pro 12.9 inch (3rd Generation), iPad

Pro 11-inch, iPad Pro 12.9-inch (2nd Generation), iPad Pro 10.5 inch, iPad Pro 9.7 inch, iPad (6th

Generation), all Apple iWatches, all HomePods, CarPlay, MacBook Pro (15 inch, 2018),

MacBook Pro (13-inch, 2018, Four Thunderbolt 3 Ports), MacBook Air (Retina, 13-inch, 2018),

and iMac Pro. (Apple Accused Products). *See e.g.*, https://support.apple.com/en-us/HT209014.

22.　　Each of the Apple Accused Products in conjunction with Siri is a system for

retrieving information from pre-selected web sites by uttering speech commands into a voice

enabled device and providing users with retrieved information in an audio form via said voice

enabled device as required by claim 1 of the '431 Patent. As a way of illustration, the Apple

iPhone X with Siri is a voice enabled device that allows users to utter speech commands into a

voice enabled device and provide users with retrieved information from pre-selected web sites in

an audio form via said voice enabled device:

See e.g., https://support.apple.com/en-us/HT204389.
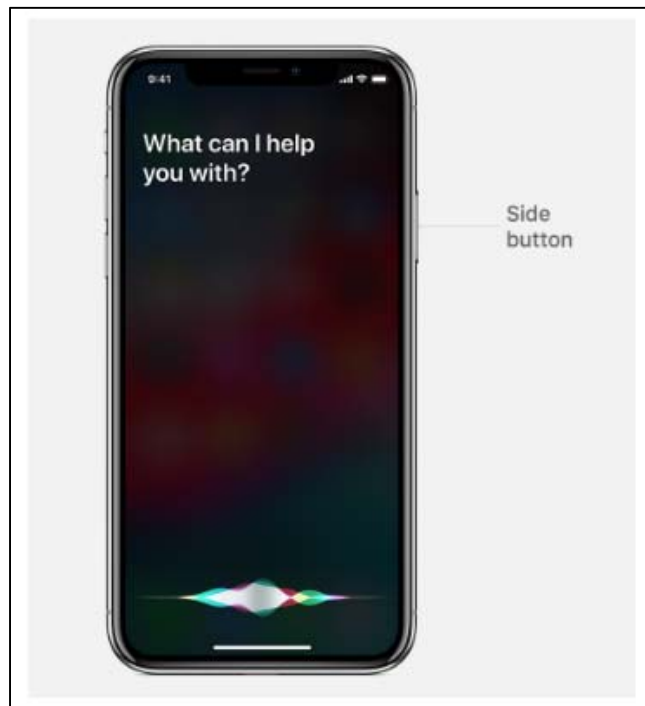
23.　　Siri allows the user to communicate with the iPhone X using voice recognition

and speech synthesis.

> Siri is a personal assistant that communicates using speech synthesis. Starting in iOS 10 and continuing with new features in iOS 11, we base Siri voices on deep learning. The resulting voices are more natural, smoother, and allow Siri's personality to shine through. This article presents more details about the deep learning based technology behind Siri's voice.

See e.g., https://machinelearning.apple.com/2017/08/06/siri-voices.html.

Hands-Free Access to Siri

To get Siri's help, say "Hey Siri". No need to press a button as "Hey Siri" makes Siri hands-free. It seems simple, but quite a lot goes on behind the scenes to wake up Siri quickly and efficiently. Hardware, software, and Internet services work seamlessly together to provide a great experience.

Figure 1. The Hey Siri flow on iPhone

See e.g., https://machinelearning.apple.com/2017/10/01/hey-siri.html.
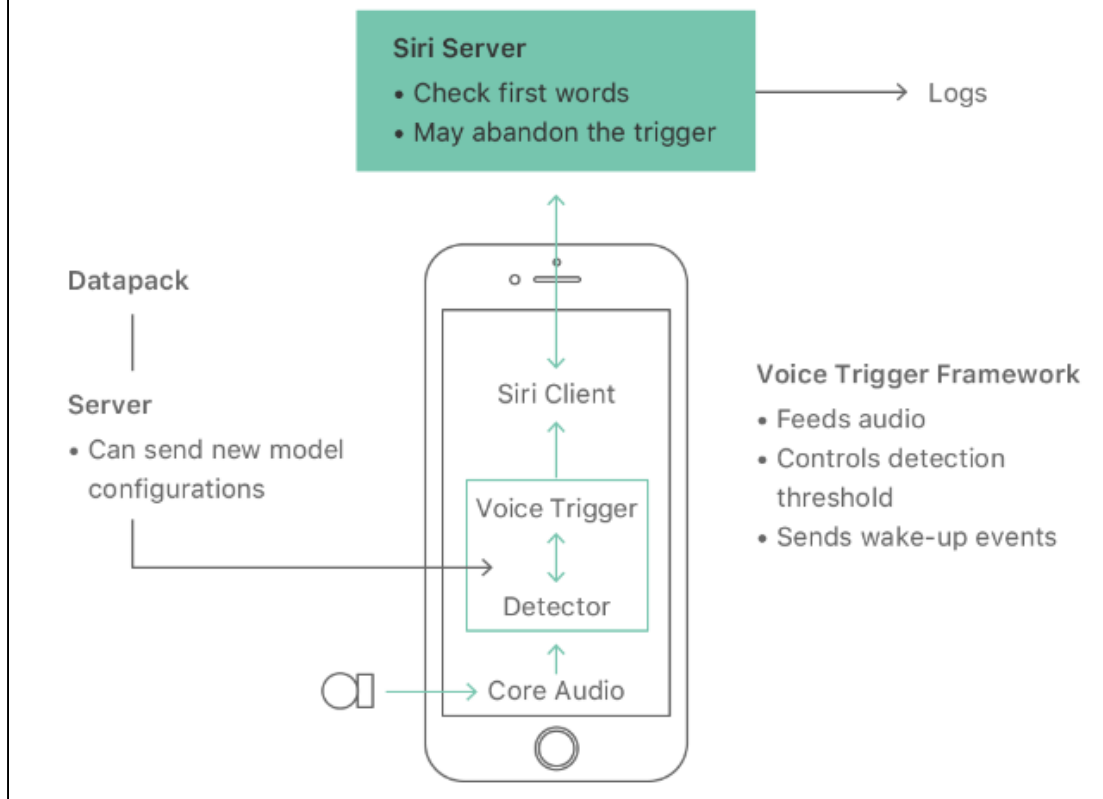
24.   Further, the Apple iPhone X uses the cloud to perform natural language processing to understand the user's spoken commands.

> When you speak a request to Siri, your iPhone's software strips the request of any reference to the User ID and gives a random request ID. It's then encrypted and sent up to the cloud for more voice recognition to identify the words, and for natural language processing to understand the meaning of the words.

See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

25.   The Apple iPhone X in conjunction with Siri acquires information from and/or via one or more sources maintaining a listing of web sites. For example, the Apple iPhone X in conjunction with Siri uses a list of web sites that have been already crawled to obtain information.

About Applebot

Learn about Applebot, the web crawler for Apple.

Applebot is the web crawler for Apple. Products like Siri and Spotlight Suggestions use Applebot. It respects customary robots.txt rules and robots meta tags, and it originates in the 17.0.0.0 net block.

See e.g., https://support.apple.com/en-us/HT204683.

26.   The Apple iPhone X in conjunction with Siri is a voice-enabled device for providing information retrieved from the web sites to the user in an audio form via the voice-enabled device.

> ## What can Siri do?
>
> Siri is the digital assistant that's built into your iPhone, iPad, Apple TV, Apple Watch and Mac. You can ask Siri to do something and have your device do it, rather than go through multiple menus or tap through lots of options.
>
> Siri is constantly improving to become faster and more reliable, and to expand its repertoire of functions. In iOS 7.1 it gained a female voice for the UK, iOS 8 added music identification and '"Hey Siri!", and iOS 9 made Siri contextually aware. iOS 10 gave it the ability to control non-Apple apps, and this coincided with it arriving on the Mac. In iOS 11 learned to translate phrases and iOS 12 introduced Siri shortcuts.

See e.g., https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/.

27.   The Apple Products in conjunction with Siri includes a computer, said computer operatively connected to the internet.

28.   For example, the Apple iPhone X has a computer (i.e. microprocessor) in the A11 integrated circuit. https://support.apple.com/kb/sp770?locale=en_US. The A11 integrated circuit is operatively coupled to the internet. *Id.* As an additional example, and alternatively, the Apple iPhone X with built-in Siri has access to computing hardware that processes questions asked of Siri including 32 powerful HP servers with a total of 1024 cores and 32 terrabytes of RAM a piece[1]. Specifically, each instance of Siri is made up of 4 HP c7k enclosures made up of 8 HP server blades each, with memory upgrades to 1TB of RAM. The company also says its text-to-speech can run on *"both general and* special purpose microprocessors, and any one or more processors of any kind of digital computer,"* indicating high sophistication and optimization.

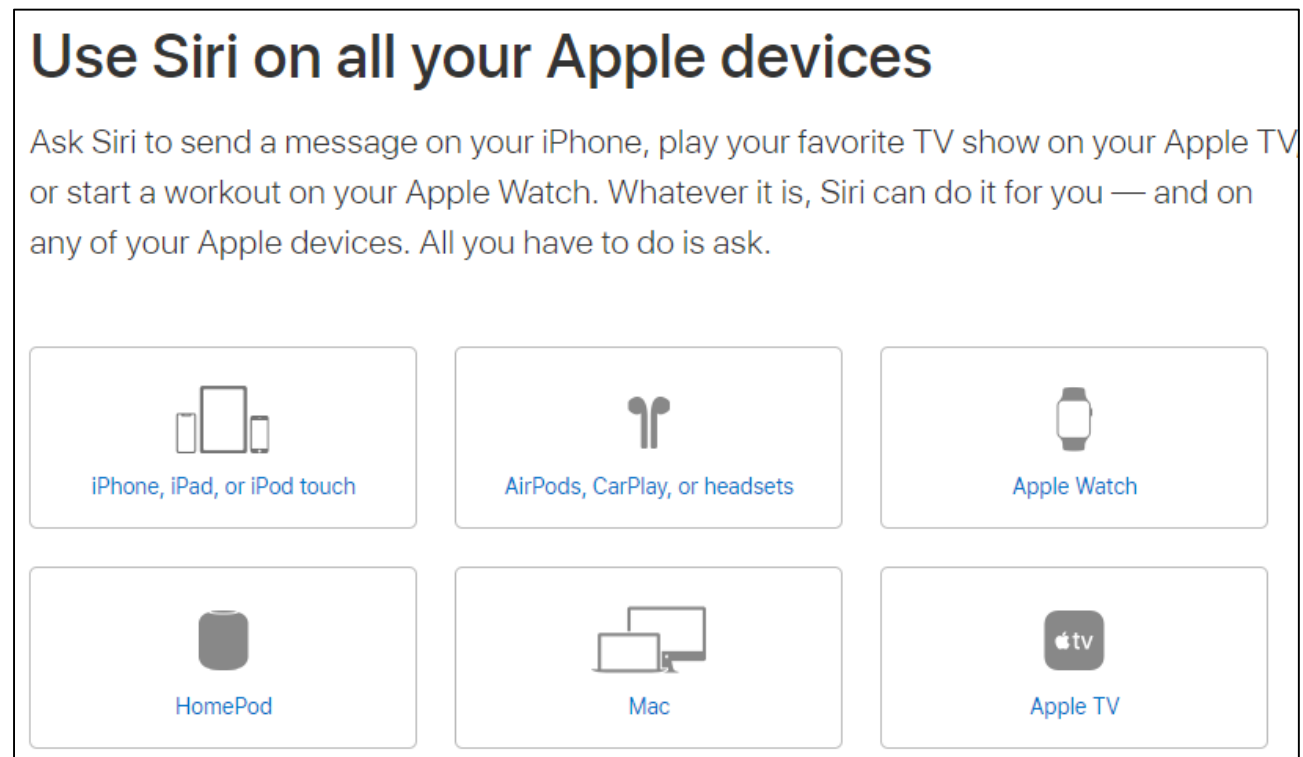[1] https://www.cultofmac.com/264381/hardware-siri-runs-puts-new-mac-pro-shame/.

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> This information allegedly comes — albeit second-hand — from Apple's lead cloud architect, who says that every instance of Siri runs on 32 powerful HP servers with a total of 1024 cores and 32 terrabytes of RAM apiece. That certainly makes the new Mac Pro look long in the tooth.
>
> Specifically, each instance of Siri is made up of 4 HP c7k enclosures made up of 8 HP server blades each, with memory upgrades to 1TB of RAM.

See e.g., https://www.cultofmac.com/264381/hardware-siri-runs-puts-new-mac-pro-shame/.

29.   Further, the computer is operatively connected to the internet and operatively connected to the cloud:

Use Siri on all your Apple devices

Ask Siri to send a message on your iPhone, play your favorite TV show on your Apple TV or start a workout on your Apple Watch. Whatever it is, Siri can do it for you — and on any of your Apple devices. All you have to do is ask.

| iPhone, iPad, or iPod touch | AirPods, CarPlay, or headsets | Apple Watch |
| HomePod | Mac | Apple TV |

See e.g., https://support.apple.com/en-us/HT204389.

30.   The Apple Accused Products in conjunction with Siri includes a voice enabled device operatively connected to said computer, said voice enabled device configured to receive speech commands from users. For example, the Apple iPhone X with built-in Siri (controlled by AI models in the cloud) includes a voice enabled device operatively connected to the computing

hardware, the voice enabled device (the microphone on the Apple iPhone X and associated

processing power) is configured to receive speech commands from users. *See e.g.*,

https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/.

31.   The Apple Accused Products in conjunction with Siri includes at least one

speaker-independent speech recognition device, said speaker-independent speech recognition

device operatively connected to said computer and to said voice enabled device. For example,

the Apple iPhone X with built-in Siri (controlled by AI models in the cloud) includes at least one

speaker-independent speech recognition device, said speaker-independent speech recognition

device operatively connected to the computing hardware and to the voice enabled Apple iPhone

X. *See e.g.*, https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/.

32.   The Apple Accused Products in conjunction with Siri includes at least one speech

synthesis device, said speech synthesis device operatively connected to said computer and to said

voice enabled device. For example, the Apple iPhone X in conjunction with Siri can handle

voice commands on the device itself or with help from the cloud. *See e.g.*,

https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/.

33.   The Apple Accused Products in conjunction with Siri includes at least one

instruction set for identifying said information to be retrieved, said instruction set being

associated with said computer, said instruction set comprising. For example, the Apple iPhone X

includes at least one instruction set for identifying the information to be retrieved, the instruction

set being associated with the computer. Because the Apple iPhone X in conjunction with Siri

can handle voice commands on the device itself or with collaboration with the cloud, there is an

instruction set for identifying the information to be retrieved, the instruction set being associated

with the computer.

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> **AI ON THE DEVICE**
>
> Like its rivals, Apple carries out a lot of fancy processing and machine learning tasks on data the user speaks or types. The majority of it–especially tasks that involve very personal information–happens on the device, locked away from the view of Apple or anyone else but the user.

See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

> When you speak a request to Siri, your iPhone's software strips the request of any reference to the User ID and gives a random request ID. It's then encrypted and sent up to the cloud for more voice recognition to identify the words, and for natural language processing to understand the meaning of the words.

See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-

without-endangering-user-privacy

34.   The Apple Accused Products in conjunction with Siri includes a plurality of pre-selected web site addresses, each said web site address identifying a web site containing said information to be retrieved. For example, the Apple iPhone X includes a plurality of pre-selected web site addresses, and each pre-selected web site address identifying a web site where the information may be retrieved. These websites have previously been crawled and pre-selected by Applebot:

> Rumors that Apple might be creating its own search engine started doing the rounds last fall, when webmasters started seeing web crawler visits from IP addresses starting with 17 – the IP address block owned entirely by Apple. Apple has now officially confirmed in a support document that it is operating its own web crawler called Applebot.
>
> > *Applebot is the web crawler for Apple, used by products including Siri and Spotlight Suggestions. It respects customary robots.txt rules and robots meta tags. It originates in the 17.0.0.0 net block.*

See e.g., https://9to5mac.com/2015/05/06/apple-search-engine-applebot/.

> ## About Applebot
>
> Learn about Applebot, the web crawler for Apple.
>
> Applebot is the web crawler for Apple. Products like Siri and Spotlight Suggestions use Applebot. It respects customary robots.txt rules and robots meta tags, and it originates in the 17.0.0.0 net block.

See e.g., https://support.apple.com/en-us/HT204683.

35.   Further, the Apple iPhone X in conjunction with Siri uses Google and Bing to assist with finding a plurality of pre-selected web site addresses, each said web site address identifying a web site containing said information to be retrieved.

> The big winner in Apple's recent switch to Google for search may be Siri. Last week Apple confirmed that its personal assistant will still use Microsoft's Bing for its image searches, but that Google will provide the web search, and YouTube will provide the video search. Apple will also use Google for searches in iOS, and in Spotlight in macOS.

See e.g., https://www.fastcompany.com/40475434/siri-may-be-the-big-winner-in-apples-switch-to-google-for-web-search.

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"Google is much better at extracting information from web content and presenting it to the user in a list format, which is created on a query by query basis," says Scott Zimmerman, technical SEO analyst at Walker Sands. "The quality of results, especially as it relates to long-tail queries that are typical for voice search, are significantly better on Google."

See e.g., https://www.fastcompany.com/40475434/siri-may-be-the-big-winner-in-apples-switch-to-google-for-web-search.

36.   The Apple Accused Products in conjunction with Siri includes at least one recognition grammar associated with said computer, each said recognition grammar corresponding to each said instruction set and corresponding to a speech command. For example, since the Apple iPhone X in conjunction with Siri can handle voice commands on the device itself or with help from the cloud, there is a recognition grammar corresponding to each instruction set and corresponding speech command.

AI ON THE DEVICE

Like its rivals, Apple carries out a lot of fancy processing and machine learning tasks on data the user speaks or types. The majority of it–especially tasks that involve very personal information–happens on the device, locked away from the view of Apple or anyone else but the user.

See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

> When you speak a request to Siri, your iPhone's software strips the request of any reference to the User ID and gives a random request ID. It's then encrypted and sent up to the cloud for more voice recognition to identify the words, and for natural language processing to understand the meaning of the words.

See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

37.   The Apple Accused Products in conjunction with Siri includes said speech command comprising an information request selectable by the user. For example, the Apple iPhone X in conjunction with Siri is a system for retrieving information from web sites by uttering speech commands into a voice enabled device. Therefore, the speech commands comprise information requests selectable by the user.

What can Siri do?

Siri is the digital assistant that's built into your iPhone, iPad, Apple TV, Apple Watch and Mac. You can ask Siri to do something and have your device do it, rather than go through multiple menus or tap through lots of options.

Siri is constantly improving to become faster and more reliable, and to expand its repertoire of functions. In iOS 7.1 it gained a female voice for the UK, iOS 8 added music identification and '"Hey Siri!", and iOS 9 made Siri contextually aware. iOS 10 gave it the ability to control non-Apple apps, and this coincided with it arriving on the Mac. In iOS 11 learned to translate phrases and iOS 12 introduced Siri shortcuts.

See e.g., https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/; *see also* https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151.

38.   The Apple Accused Products in conjunction with Siri includes said speaker-independent speech recognition device configured to receive from users via said voice enabled device said speech command and to select the corresponding recognition grammar upon receiving said speech command. For example, the Apple iPhone X includes the speaker-independent speech recognition device that is configured to receive from users via the voice enabled device the speech command and to select the corresponding recognition grammar upon receiving the speech command. Because the Apple iPhone X in conjunction with Siri can handle voice commands on the device itself or in collaboration with the cloud, there is a recognition grammar corresponding to each instruction set and corresponding speech command. *See e.g.*, https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/; https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy; https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

39.   The Apple Accused Products in conjunction with Siri includes said computer configured to retrieve said instruction set corresponding to said recognition grammar selected by said speaker-independent speech recognition device. For example, the Apple iPhone X includes computer hardware configured to retrieve the instruction set corresponding to the recognition grammar selected by the speaker-independent speech recognition device. Because the Apple iPhone X in conjunction with Siri can handle voice commands on the device itself or in collaboration with the cloud, a POSITA would understand that there is a recognition grammar corresponding to each instruction set and corresponding speech command. *See e.g.*, https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/; https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-

endangering-user-privacy; https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

40.   The Apple Accused Products in conjunction with Siri includes said computer further configured to access at least one of said plurality of web sites identified by said instruction set to obtain said information to be retrieved, aid computer configured to first access said first web site of said plurality of web sites and, if said information to be retrieved is not found at said first web site, said computer configured to sequentially access said plurality of web sites until said information to be retrieved is found or until said plurality of web sites has been accessed. For example, the Apple iPhone X with built-in Siri is a system for retrieving information from pre-selected web sites by uttering speech commands into a voice enabled device. Apple references Siri on its website as the virtual assistant that recognizes voice commands and executes the requested functions. Siri uses various sources for obtaining information, by delegating searches to search engines (Bing or Google), by using other websites such as Yelp, or by accessing any one of several applications on the device. *See e.g.*, https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/; https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy; https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

41.   Further, the Apple iPhone X in conjunction with Siri uses Applebot to crawl a plurality of web sites.

> Rumors that Apple might be creating its own search engine started doing the rounds last fall, when webmasters started seeing web crawler visits from IP addresses starting with 17 – the IP address block owned entirely by Apple. Apple has now officially confirmed in a support document that it is operating its own web crawler called Applebot.
>
> > *Applebot is the web crawler for Apple, used by products including Siri and Spotlight Suggestions. It respects customary robots.txt rules and robots meta tags. It originates in the 17.0.0.0 net block.*

See e.g., https://9to5mac.com/2015/05/06/apple-search-engine-applebot/.

> # About Applebot
>
> Learn about Applebot, the web crawler for Apple.
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> Applebot is the web crawler for Apple. Products like Siri and Spotlight Suggestions use Applebot. It respects customary robots.txt rules and robots meta tags, and it originates in the 17.0.0.0 net block.

See e.g., https://support.apple.com/en-us/HT204683.

42.　　In addition to Applebot, the Apple iPhone X in conjunction with Siri uses Google and Bing for searches as well. *See e.g.*, https://www.fastcompany.com/40475434/siri-may-be-the-big-winner-in-apples-switch-to-google-for-web-search; https://www.fastcompany.com/40475434/siri-may-be-the-big-winner-in-apples-switch-to-google-for-web-search.

43.　　The Apple Accused Products in conjunction with Siri includes said speech synthesis device configured to produce an audio message containing any retrieved information from said pre-selected web sites, and said speech synthesis device further configured to transmit said audio message to said users via said voice enabled device. For example, the Apple iPhone X includes the speech synthesis device configured to produce an audio message containing any retrieved information from the pre-selected web sites, and the speech synthesis device further

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configured to transmit said audio message to said users via said voice enabled device. Because the Apple iPhone X in conjunction with Siri can handle voice commands on the device itself or in collaboration with the cloud, there is a recognition grammar corresponding to each instruction set and corresponding speech command. *See e.g.*, https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/; https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/; https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/; https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/; https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy; https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

44.   In addition to directly infringing the '431 Patent, Defendant Apple indirectly infringes the '431 Patent pursuant to 35 U.S.C. § 271(b). Defendant Apple has had knowledge of the '431 Patent since at least the filing of the original complaint. By the time of trial, Defendant Apple will have known and intended (since receiving such notice) that their continued actions would actively induce the infringement of the claims of the '431 Patent.

45.   Defendant Apple indirectly infringes the '431 Patent by instructing, directing and/or requiring others, including customers, purchasers, users and developers, to perform one or more of the steps of the method claims, either literally or under the doctrine of equivalents, of the '431 Patent, where all the steps of the method claims are performed by either Apple, its customers, purchasers, users, and developers, or some combination thereof. Apple knew or should have known that it was inducing others, including customers, purchasers, users, and developers, to infringe by practicing, either themselves or in conjunction with Apple, one or more method claims of the '431 Patent.

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46.   Upon information and belief, Defendant Apple knowingly and actively aided and abetted the direct infringement of the '431 Patent by instructing and encouraging its customers, purchasers, users, and developers to use the '431 Patent methods and technology. These instructions of encouragement include, but are not limited to, using the Apple Accused Products as described in the claims of the '431 Patent, in advertising and promoting the use of the '431 Patent's claimed technology, and as further described above.

47.   Defendant Apple has also infringed, and continues to infringe, claims of the '431 Patent by offering to commercially distribute, commercially distributing, making and/or importing the Apple Accused Products, which are used in practicing the process, or using the systems, of the '431 Patent, and constitute a material part of the invention. Defendant Apple knows the components in the Apple Accused Products to be especially made or especially adapted for use in infringement of the '431 Patent, not a staple article, and not a commodity of commerce suitable for substantial noninfringing use. For example, the ordinary way of using the Apple Accused Products infringes the patent claims, and as such, is especially adapted for use in infringement as set forth above. Accordingly, Defendant Apple has been, and currently is, contributorily infringing the '431 Patent, in violation of 35 U.S.C. § 271(c).

COUNT II

APPLE'S INFRINGEMENT OF U.S. PATENT NO. 9,451,084

48.   Parus restates and incorporates by reference all of the allegations made in the preceding paragraphs as though fully set forth herein.

49.   Parus is the owner, by assignment, of U.S. Patent No. 9,451,084. A true copy of U.S. Patent No. 9,451,084 granted by the U.S. Patent & Trademark Office is attached as Exhibit 2.
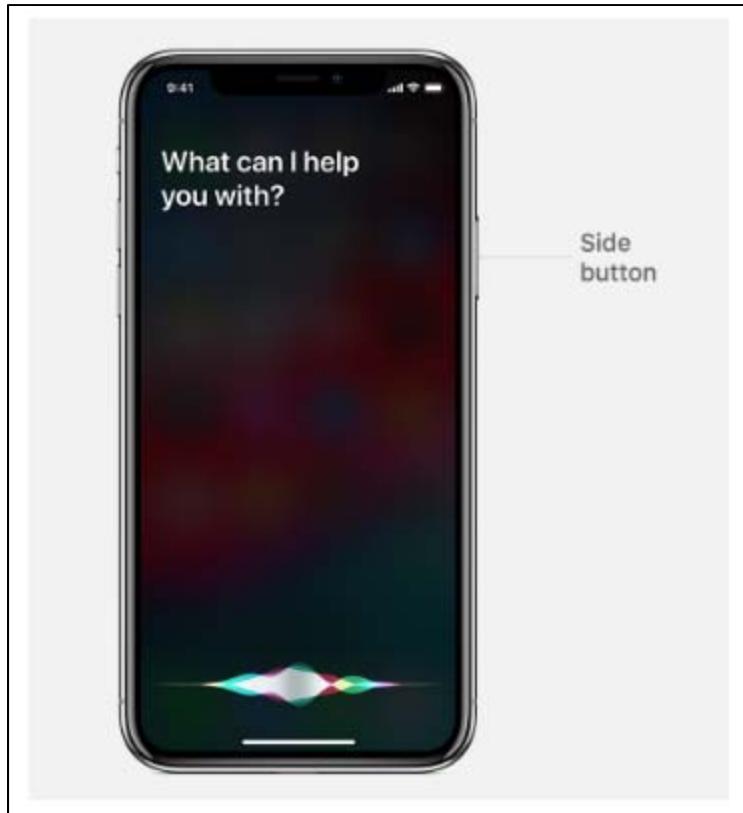
50.   Defendant Apple has directly infringed, and is continuing to directly infringe, literally or under the doctrine of equivalents, at least independent claim 1 of Parus's '084 Patent by making, using, selling, and/or offering for sale its Apple smartphone devices with Siri in the United States, in violation of 35 U.S.C. § 271(a).

51.   At least as of the filing of the original complaint, Defendant Apple has knowledge of the '084 Patent.

52.   Further, on information and belief, Apple had and/or has a policy or practice of not reviewing the patents of others (including instructing its employees to not review the patents of others), and has thus remained willfully ignorant of Parus's patent rights. *See, e.g.,* Apple Ordered to Pay $370 Million Because Its Engineers Ignored Patents When They Built Face Time, Yahoo Finance, Nov. 7, 2012 (quoting VirnetX attorney during closing arguments as saying "Apple says they don't infringe. But Apple developers testified that they didn't pay any attention to anyone's patents when developing their system.").

53.   Defendant Apple's acts of direct infringement of the '084 Patent are willful, and have caused and will continue to cause substantial damage and irreparable harm to Parus, and Parus has no adequate remedy at law.

54.   The Apple Accused Products in conjunction with Siri is a system for acquiring information from one or more sources maintaining a listing of web sites by receiving speech commands uttered by users into a voice-enabled device and for providing information retrieved from the web sites to the users in an audio form via the voice-enabled device. For example, the Apple iPhone X in conjunction with Siri is a voice enabled device:

See e.g., https://support.apple.com/en-us/HT204389; *see also*,

https://machinelearning.apple.com/2017/08/06/siri-voices.html;

https://machinelearning.apple.com/2017/10/01/hey-siri.html.

55.   The Apple Accused Products in conjunction with Siri includes at least one

computing device, the computing device operatively coupled to one or more networks. For

example, the Apple iPhone X has a computer (i.e. microprocessor) in the A11 integrated circuit.

https://support.apple.com/kb/sp770?locale=en_US. The A11 integrated circuit is operatively

coupled to the internet. *Id.*

56.   As an additional example, and alternatively, the Apple iPhone X with built-in Siri

has access to computing hardware that processes questions asked of Siri including 32 powerful

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HP servers with a total of 1024 cores and 32 terrabytes of RAM a piece[2]. Specifically, each

instance of Siri is made up of 4 HP c7k enclosures made up of 8 HP server blades each, with

memory upgrades to 1TB of RAM. The company also says its text-to-speech can run on *"both*

general and special purpose microprocessors, and any one or more processors of any kind of

digital computer,"* indicating high sophistication and optimization.

> This information allegedly comes — albeit second-hand — from Apple's lead cloud architect, who says that every instance of Siri runs on 32 powerful HP servers with a total of 1024 cores and 32 terrabytes of RAM apiece. That certainly makes the new Mac Pro look long in the tooth.
>
> Specifically, each instance of Siri is made up of 4 HP c7k enclosures made up of 8 HP server blades each, with memory upgrades to 1TB of RAM.

See e.g., https://www.cultofmac.com/264381/hardware-siri-runs-puts-new-mac-pro-shame/.
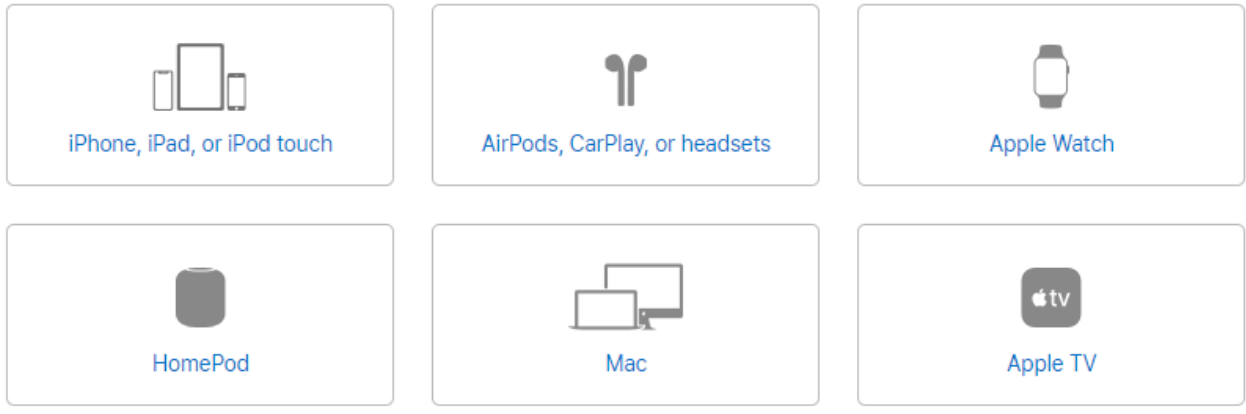
57.   Further, the Apple iPhone X in conjunction with Siri is a computing device

operatively coupled to one or more networks.

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[2] https://www.cultofmac.com/264381/hardware-siri-runs-puts-new-mac-pro-shame/.

Use Siri on all your Apple devices

Ask Siri to send a message on your iPhone, play your favorite TV show on your Apple TV, or start a workout on your Apple Watch. Whatever it is, Siri can do it for you — and on any of your Apple devices. All you have to do is ask.

iPhone, iPad, or iPod touch	AirPods, CarPlay, or headsets	Apple Watch
HomePod	Mac	Apple TV

See e.g., https://support.apple.com/en-us/HT204389; *see also* https://support.apple.com/en-us/HT204389.

58.   The Apple Accused Products in conjunction with Siri includes at least one speaker-independent speech-recognition device, the speaker-independent speech-recognition device operatively connected to the computing device and configured to receive the speech commands. For example, the Apple iPhone X in conjunction with Siri is a speaker-independent speech-recognition device, the speaker-independent speech-recognition device operatively connected to the computing device and configured to receive the speech commands. *See e.g.*, https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/; https://machinelearning.apple.com/2017/10/01/hey-siri.html.

59.   The Apple iPhone X in conjunction with Siri can receive and process voice commands on the device itself or in collaboration with the cloud (via the speech recognition and AI models).

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How Siri Works

Upon receiving your request, Siri records the frequencies and sound waves from your voice and translates them into a code. Siri then breaks down the code to identify particular patterns, phrases, and keywords. This data gets input into an algorithm that sifts through thousands of combinations of sentences to determine what the inputted phrase means. This algorithm is complex enough that it is capable of working around idioms, homophones and other literary expressions to determine the context of a sentence.

Once Siri determines its request, it begins to assess what tasks needs to be carried out, determining whether or not the information needed can be accessed from within the phone's data banks or from online servers. Siri is then able to craft complete and cohesive sentences relevant to the type of question or command requested.

See e.g., https://www.jameco.com/Jameco/workshop/howitworks/how-siri-works.html.

When you speak a request to Siri, your iPhone's software strips the request of any reference to the User ID and gives a random request ID. It's then encrypted and sent up to the cloud for more voice recognition to identify the words, and for natural language processing to understand the meaning of the words.

See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

AI ON THE DEVICE

Like its rivals, Apple carries out a lot of fancy processing and machine learning tasks on data the user speaks or types. The majority of it–especially tasks that involve very personal information–happens on the device, locked away from the view of Apple or anyone else but the user.

See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy; *see also* https://machinelearning.apple.com/2017/10/01/hey-siri.html; https://machinelearning.apple.com/2017/10/01/hey-siri.html.

60.   The Apple Accused Products in conjunction with Siri includes at least one speech-synthesis device, the speech-synthesis device operatively connected to the computing device. For example, the Apple iPhone X in conjunction with Siri can handle voice commands on the device itself or with help from the cloud. *See e.g.*, https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/; https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy; https://machinelearning.apple.com/2017/10/01/hey-siri.html; https://machinelearning.apple.com/2017/10/01/hey-siri.html; https://machinelearning.apple.com/2017/10/01/hey-siri.html.

61.   The Apple Accused Products in conjunction with Siri includes a memory operatively associated with the computing device with at least one instruction set for identifying the information to be retrieved, the instruction set being associated with the computing device, the instruction set comprising. For example, the Apple iPhone X in conjunction with Siri is a computing device that includes a memory. For example, each of the iPhone models are offered with different memory capacities:

See e.g., https://support.apple.com/kb/SP779?viewlocale=en_US&locale=en_US.

62.   The Apple Accused Products in conjunction with Siri includes a plurality of web site addresses for the listing of web sites, each web site address identifying a web site containing information relevant to a search request to be retrieved. For example, the Apple iPhone X in conjunction with Siri includes a plurality of web site addresses, each web site address identifying a web site containing the information to be retrieved. These websites have previously been crawled by Applebot:

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> Rumors that Apple might be creating its own search engine started doing the rounds last fall, when webmasters started seeing web crawler visits from IP addresses starting with 17 − the IP address block owned entirely by Apple. Apple has now officially confirmed in a support document that it is operating its own web crawler called Applebot.
>
> > *Applebot is the web crawler for Apple, used by products including Siri and Spotlight Suggestions. It respects customary robots.txt rules and robots meta tags. It originates in the 17.0.0.0 net block.*

See e.g., https://9to5mac.com/2015/05/06/apple-search-engine-applebot/.

> # About Applebot
>
> Learn about Applebot, the web crawler for Apple.
>
> Applebot is the web crawler for Apple. Products like Siri and Spotlight Suggestions use Applebot. It respects customary robots.txt rules and robots meta tags, and it originates in the 17.0.0.0 net block.

See e.g., https://support.apple.com/en-us/HT204683.

63.   Further, the Apple iPhoneX in conjunction with Siri uses Google and Bing to assist with finding a plurality of web site addresses, each said web site address identifying a web site containing said information to be retrieved.

> The big winner in Apple's recent switch to Google for search may be Siri. Last week Apple confirmed that its personal assistant will still use Microsoft's Bing for its image searches, but that Google will provide the web search, and YouTube will provide the video search. Apple will also use Google for searches in iOS, and in Spotlight in macOS.

See e.g., https://www.fastcompany.com/40475434/siri-may-be-the-big-winner-in-apples-switch-to-google-for-web-search.

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> "Google is much better at extracting information from web content and presenting it to the user in a list format, which is created on a query by query basis," says Scott Zimmerman, technical SEO analyst at Walker Sands. "The quality of results, especially as it relates to long-tail queries that are typical for voice search, are significantly better on Google."

See e.g., https://www.fastcompany.com/40475434/siri-may-be-the-big-winner-in-apples-switch-to-google-for-web-search.

64.   The Apple Accused Products in conjunction with Siri includes at least one recognition grammar associated with the computing device, each recognition grammar corresponding to each instruction set and corresponding to a speech command, the speech command comprising an information request provided by the user, the speaker-independent speech-recognition device configured to receive the speech command from the users via the voice-enabled device and to select the corresponding recognition grammar upon receiving the speech command. For example, because the Apple iPhone X in conjunction with Siri can handle voice commands on the device itself or with help from the cloud, there is a recognition grammar corresponding to each said instruction set and corresponding speech command.

AI ON THE DEVICE

Like its rivals, Apple carries out a lot of fancy processing and machine learning tasks on data the user speaks or types. The majority of it–especially tasks that involve very personal information–happens on the device, locked away from the view of Apple or anyone else but the user.

See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

> When you speak a request to Siri, your iPhone's software strips the request of any reference to the User ID and gives a random request ID. It's then encrypted and sent up to the cloud for more voice recognition to identify the words, and for natural language processing to understand the meaning of the words.

See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

65.   Further, the Apple iPhone X in conjunction with Siri is a system for retrieving information from web sites by uttering speech commands into a voice enabled device. Therefore, the speech commands comprise information requests selectable by the user. *See e.g.*, https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/.

Siri can be used for the following:

- Scheduling events
- Finding locations and directions in Maps
- Setting a timer
- Checking the weather
- Updating status on Facebook
- Sending Tweets
- Calculations
- Playing music
- Opening apps
- Sending emails
- Sending Messages

See e.g., https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/; *see also*

https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/;

https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/.

66.   Also, the Apple iPhone X in conjunction with Siri includes the speaker-

independent speech-recognition device configured to receive the speech command from the users

via the voice-enabled device and to select the corresponding recognition grammar upon receiving

the speech command. *See e.g.,* https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-

ipad-3495151/; https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-

smart-without-endangering-user-privacy; https://www.fastcompany.com/40443055/apple-

explains-how-its-making-siri-smart-without-endangering-user-privacy.

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67.   The Apple Accused Products in conjunction with Siri includes the computing device configured to retrieve the instruction set corresponding to the recognition grammar provided by the speaker-independent speech-recognition device. For example, because the Apple iPhone X in conjunction with Siri can handle voice commands on the device itself or with help from the cloud, there is a recognition grammar corresponding to each said instruction set and corresponding speech command. *See e.g.,* https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/.

See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy; *see also* https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

68.   The Apple Accused Devices in conjunction with Siri includes the computing device further configured to access at least one of the plurality of web sites identified by the instruction set to obtain the information to be retrieved, wherein the computing device is further configured to periodically search via the one or more networks to identify new web sites and to add the new web sites to the plurality of web sites, the computing device configured to access a first web site of the plurality of web sites and, if the information to be retrieved is not found at the first web site, the computer configured to access the plurality of web sites remaining in an order defined for accessing the listing of web sites until the information to be retrieved is found

in at least one of the plurality of web sites or until the plurality of web sites have been accessed.

For example, the Apple iPhone X with built-in Siri is a system for retrieving information from

pre-selected web sites by uttering speech commands into a voice enabled device. Apple

references Siri on its website as the virtual assistant that recognizes voice commands and

executes the requested functions. Siri uses various sources for obtaining information, either by

delegating searches to search engines (Bing or Google) or using websites such as Yelp and

others, or by accessing any one of several apps that it has on its device. *See e.g.*,

https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/;

https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-

endangering-user-privacy; https://www.fastcompany.com/40443055/apple-explains-how-its-

making-siri-smart-without-endangering-user-privacy.

   69. Further, the Apple iPhone X in conjunction with Siri use Applebot to crawl a

plurality of web sites.

> Rumors that Apple might be creating its own search engine started doing the rounds last fall, when webmasters started seeing web crawler visits from IP addresses starting with 17 – the IP address block owned entirely by Apple. Apple has now officially confirmed in a support document that it is operating its own web crawler called Applebot.
>
>> *Applebot is the web crawler for Apple, used by products including Siri and Spotlight Suggestions. It respects customary robots.txt rules and robots meta tags. It originates in the 17.0.0.0 net block.*

See e.g., https://9to5mac.com/2015/05/06/apple-search-engine-applebot/.

About Applebot

Learn about Applebot, the web crawler for Apple.

Applebot is the web crawler for Apple. Products like Siri and Spotlight Suggestions use Applebot. It respects customary robots.txt rules and robots meta tags, and it originates in the 17.0.0.0 net block.

See e.g., https://support.apple.com/en-us/HT204683.

70.　　In addition to Applebot, the Apple iPhone X in conjunction with Siri use Google

and Bing for search as well:

> The big winner in Apple's recent switch to Google for search may be Siri. Last week Apple confirmed that its personal assistant will still use Microsoft's Bing for its image searches, but that Google will provide the web search, and YouTube will provide the video search. Apple will also use Google for searches in iOS, and in Spotlight in macOS.

See e.g., https://www.fastcompany.com/40475434/siri-may-be-the-big-winner-in-apples-switch-to-google-for-web-search.

> "Google is much better at extracting information from web content and presenting it to the user in a list format, which is created on a query by query basis," says Scott Zimmerman, technical SEO analyst at Walker Sands. "The quality of results, especially as it relates to long-tail queries that are typical for voice search, are significantly better on Google."

See e.g., https://www.fastcompany.com/40475434/siri-may-be-the-big-winner-in-apples-switch-to-google-for-web-search.

71.　　The Apple Accused Products in conjunction with Siri includes the speech

synthesis device configured to produce an audio message containing any retrieved information

from the plurality of web sites. For example, the Apple iPhone X in conjunction with Siri

includes the speech synthesis device configured to produce an audio message containing any

retrieved information from the plurality of web sites, and the speech synthesis device further

configured to transmit said audio message to said users via said voice enabled device. Because

the Apple iPhone X in conjunction with Siri can receive and process voice commands on the

device itself or in collaboration with the cloud, there is a recognition grammar corresponding to

each instruction set and corresponding speech command. *See e.g.*,

https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/;

https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/;

https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/;

https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/.

AI ON THE DEVICE

Like its rivals, Apple carries out a lot of fancy processing and machine learning tasks on data the user speaks or types. The majority of it– especially tasks that involve very personal information–happens on the device, locked away from the view of Apple or anyone else but the user.

See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy; *see also*, https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

72.   The Apple Accused Products in conjunction with Siri includes the speech

synthesis device further configured to transmit the audio message to the users via the voice-

enabled device. For example, the Apple iPhone X in conjunction with Siri transmits the audio

message to the user via the voice enabled device. *See e.g.*, https://www.macworld.co.uk/how-

to/iosapps/use-siri-iphone-ipad-3495151/.

73.   In addition to directly infringing the '431 Patent, Defendant Apple indirectly

infringes the '084 Patent pursuant to 35 U.S.C. § 271(b). Defendant Apple has had knowledge

of the '084 Patent since at least the filing of the original complaint. By the time of trial,

Defendant Apple will have known and intended (since receiving such notice) that their continued actions would actively induce the infringement of the claims of the '084 Patent.

74.   Apple indirectly infringes the '084 Patent by instructing, directing and/or requiring others, including customers, purchasers, users and developers, to perform one or more of the steps of the method claims, either literally or under the doctrine of equivalents, of the '084 Patent, where all the steps of the method claims are performed by either Apple, its customers, purchasers, users, and developers, or some combination thereof. Apple knew or should have known that it was inducing others, including customers, purchasers, users, and developers, to infringe by practicing, either themselves or in conjunction with Apple, one or more method claims of the '084 Patent.

75.   Upon information and belief, Apple knowingly and actively aided and abetted the direct infringement of the '084 Patent by instructing and encouraging its customers, purchasers, users, and developers to use the '084 Patent methods and technology. These instructions of encouragement include, but are not limited to, using the accused products as described in the claims of the '084 Patent, in advertising and promoting the use of the '084 Patent's claimed technology, and as further described in above.

76.   Defendant Apple has also infringed, and continues to infringe, claims of the '084 Patent by offering to commercially distribute, commercially distributing, making and/or importing the Apple Accused Products, which are used in practicing the process, or using the systems, of the '084 Patent, and constitute a material part of the invention. Defendant Apple knows the components in the Apple Accused Products to be especially made or especially adapted for use in infringement of the '084 Patent, not a staple article, and not a commodity of commerce suitable for substantial noninfringing use. For example, the ordinary way of using the

Apple Accused Products infringes the patent claims, and as such, is especially adapted for use in infringement as set forth above. Accordingly, Apple has been, and currently is, contributorily infringing the '084 Patent, in violation of 35 U.S.C. § 271(c).

PRAYER FOR RELIEF

WHEREFORE, Parus request the Court grant the relief set forth below:

A.   Enter judgment that Defendant has directly infringed, and continues to directly infringe, one or more claims of the '431 Patent and/or the '084 Patent;

B.   Enter judgment that Defendant's acts of patent infringement are willful;

C.   Enter judgment that Defendant has induced infringement, and continues to induce infringement, one or more claims of the '431 Patent and/or the '084 Patent;

D.   Temporarily, preliminarily, or permanently enjoin Defendant, their parents, subsidiaries, affiliates, divisions, officers, agents, servants, employees, directors, partners, representatives, all individuals and entities in active concert and/or participation with them, and all individuals and/or entities within their control from engaging in the aforesaid unlawful acts of patent infringement;

E.   Order Defendant to account for and pay damages caused to Parus by Defendant's unlawful acts of patent infringement;

F.   Award Parus increased damages and attorney fees pursuant to 35 U.S.C. §§ 284 and 285;

G.   Award Parus the interest and costs incurred in this action; and

H.   Grant Parus such other and further relief, including equitable relief, as the Court deems just and proper.

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DEMAND FOR JURY TRIAL

Plaintiff demands a jury trial for all issues deemed to be triable by a jury.

Dated: October 21, 2019   Respectfully submitted,

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                                           Counsel for Plaintiff Parus Holdings Inc.

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<u>CERTIFICATE OF SERVICE</u>

The undersigned hereby certifies that a true and correct copy of the foregoing document

has been served on October 21, 2019 to all counsel of record who are deemed to have consented

to electronic service via the Court's CM/ECF system.

<div align="right">

/s/ <i>Andrea L. Fair</i>
Andrea L. Fair

</div>

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